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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,849	09/17/2003	Mark Kris	ROXIP288	8507

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EXAMINER
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GE, YUZHEN

ART UNIT	PAPER NUMBER
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2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/12/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/665,849

Applicant(s)

KRIS ET AL.

Examiner

Yuzhen Ge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-3,5,7-9,11,12 and 14-20 is/are rejected.
- 7) ☒ Claim(s) 4,6,10 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____                                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____   | 6) <input type="checkbox"/> Other: ____                           |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because some of the handwritten labels are hard to read. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 101***

2. Claims 16-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility states in page 53 that "A claimed computer-readable medium encoded with a

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computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory."

However, Claims 16-20 does not recite explicitly "a computer-readable medium encoded with a computer program". The recitation of "a computer-readable media having program instructions ..." may include other nonstatutory subject matters.

Currently in TC 2600, it is required explicitly to include "computer-readable medium", "encoded" (or "storing", "embodied with a", "encoded with a", "having a stored", "having an encoded"), and "computer program" in the claim language to make it explicitly a statutory subject matter.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al (US Patent 6,895,112 B2).

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Regarding claim 1, Chen et al teach a method for performing red eye correction in an image, comprising:

providing a digital image (Figs. 1 and 2);  
identifying a red eye region in the digital image (Fig. 2, col. 3, lines 1-32); and  
applying a color correction to each pixel in the identified red eye region (col. 3, lines 14-18),

wherein the method for performing red eye correction in the image is automatic, requiring no input from a user to identify the red eye region, and to apply the color correction (col. 2, lines 38-41, col. 3, lines 14-18, Figs. 1 and 2).

Claim 16 is the corresponding computer readable medium claim of claim 1. Chen et al teach a computer readable medium (col. 9, lines 7-45). Thus Chen et al teach claim 1 as evidently explained in the above-cited passages.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 7-8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al in view of Frei et al (US Patent 6,868,178 B1).

Regarding claim 2, Chen et al teach the method for performing red eye correction in an image as recited in claim 1. They do teach defining the digital image in a hue-saturation-intensity (HSI) color space (col. 3, lines 42-46). However they do not explicitly teach wherein each dimension of hue, saturation, and intensity is scaled to be defined by a segment having coordinates [0.0; 1.0]. In the same field of endeavor, Frei et al teach to scaled hue, saturation, and intensity by a segment having coordinates [0.0; 1.0] (Figs. 5-12). Also a scale is merely setting a unit for computation and different scales can be used to represent a point in a color space. It is desirable to have a common criterion for images with different hue, saturation, and intensity when determining membership (col. 9, lines 41-47, col. 11, lines 41-55 of Frei et al). Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the method of Frei et al in the method of Chen et al to scale each dimension of hue, saturation and intensity to a segment having coordinate [0.0, 1.0] so that a common criterion can be determined and used.

Regarding claim 7, Chen et al and Frei et al teach the method for performing red eye correction in an image as recited in claim 2. Chen et al further teach applying a filter to the identified red eye region (Fig. 2).

Regarding claim 8, Chen et al and Frei et al teach the method for performing red eye correction in an image as recited in claim 7. Chen et al further teach wherein the applying the filter to the identified red eye region includes applying at least one of a size filter, a shape filter, a color

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weight filter, a brightness dispersion filter, and a spectral criteria filter (Fig. 2, col. 4, line 46-col. 5, line 42, for example, Rule 1) represents a size filter, Rule 3) represents a shape filter).

Claim 17 is the corresponding computer readable medium claim of claim 2. Chen et al teach a computer readable medium (col. 9, lines 7-45). Thus Chen et al teach claim 17 as evidently explained in the above-cited passages.

7. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al, in view of Frei et al, further in view of Benati et al (US Patent 5,432,863).

Regarding claims 3 and 5, Chen et al and Frei et al teach the method for performing red eye correction in an image as recited in claim 2. However they do not explicitly teach wherein identifying of the red eye region in the digital image includes determining whether any pixel in the digital image falls within a defined hue segment in the HSI color space and wherein identifying of the red eye region in the digital image includes determining whether any pixel in the digital image falls within a defined region of saturation and intensity in the HSI color space. In the same field of endeavor, Benati et al teach identifying of the red eye region in the digital image includes determining whether any pixel in the digital image falls within a defined hue segment and a defined region of saturation and intensity in the HSI color space and (col. 4, lines 20-28). It is desirable to identify the red eye region based on color of the red eye region (col. 3, lines 65-col. 4, line 46 of Benati et al). Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the method of Benati et al in the method of Chen et

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al and Frei et al to correctly identify red eye region based on the color and the brightness of the region.

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al, in view of Frei et al, further in view of Takaoka et al (US Patent 6,798,903 B2).

Regarding claim 9, Chen et al and Frei et al teach the method for performing red eye correction in an image as recited in claim 2. However they do not explicitly teach

wherein the identifying of the red eye region in the digital image includes calculating an arithmetic average for each of hue, saturation, and intensity for each pixel within a defined red eye region, the defined red eye region satisfying criteria for hue, saturation, and intensity. In the same field of endeavor, Takaoka et al teach calculating an arithmetic average for each of hue, saturation, and intensity for each pixel within a defined red eye region, the defined red eye region satisfying criteria for hue, saturation, and intensity (col. 22, lines 11-62, Figs. 2A-2C and 7). It is desirable to perform red eye correction based on the characteristic/average of the unsatisfactory color tone in the pupil region (col. 2, lines 1-41 of Takaoka et al). Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention to use the method of Takaoka et al to correct red-eye effect by calculating an arithmetic average for each of hue, saturation, and intensity for each pixel within a defined red eye region, the defined red eye region satisfying criteria for hue, saturation, and intensity.



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9. Claims 11 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al in view of Benati et al (US Patent 5,432,863).

Regarding claim 11 and 18, Chen et al teach a method for performing red eye correction in a digital image and the computer readable medium of claim 16, comprising:

identifying red areas in the digital image (Fig. 2, col. 3, lines 1-32);

filtering out non -red-eye red areas from the identified red areas, the filtering including the disregarding of areas too large for red eye effect, areas of an inappropriate shape to have red eye; areas of insufficient color intensity; areas of insufficient brightness dispersion, and areas failing to match a pre-determined spectral criteria (col. 4, lines 1-25, col. 4, line 52-col. 5, line 41, the Gaussian distribution for red-eye colors is a predetermined spectral criteria, also both  $g$  and  $\gamma$  represents color intensity of green and red);

defining a region having red eye effect (col. 3, lines 1-32, col. 4, line 52-col. 5, line 41, Fig. 1 and 2); and

applying a color correction to the defined region (col. 3, lines 14-18),

wherein the method is performed automatically and without user input to define and to correct the region having red eye effect (col. 2, lines 38-41, col. 3, lines 14-18, Figs. 1 and 2).

However they do not explicitly teach disregarding of areas of insufficient brightness dispersion.

In the same field of endeavor, Benati et al teach disregarding of areas of insufficient brightness dispersion (col. 4, lines 20-46). It is desirable to correctly detect red eye area which is a result of using flash (col. 1, lines 30-33, col. 4, line 65-col. 5, line 29, Fig. 5 of Benati et al). Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the

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method of Benati et al to disregard the area with insufficient brightness dispersion so that the red-eye area can be correctly detected.

10. Claims 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al in view of Benati et al (US Patent 5,432,863), further in view of Frei et al (US Patent 6,868,178 B1).

Regarding claim 12, Chen et al and Benati et al teach the method of claim 11. However they do not explicitly teach wherein the digital image is defined in a hue-saturation-intensity (HSI) color space, each of the dimensions of hue, saturation, and intensity being scaled to a segment bounded by coordinates [0.0; 1.0]. . They do teach defining the digital image in a hue-saturation-intensity (HSI) color space (col. 3, lines 42-46 of Chen et al, col. 4, lines 20-29, Fig. 5 of Benati et al). In the same field of endeavor, Frei et al teach to scaled hue, saturation, and intensity by a segment having coordinates [0.0; 1.0] (Figs. 5-12). Also a scale is merely setting a unit for computation and different scales can be used to represent a point in a color space. It is desirable to have a common criterion for images with different hue, saturation, and intensity when determining membership (col. 9, lines 41-47, col. 11, lines 41-55 of Frei et al). Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the method of Frei et al in the method of Chen et al to scale each dimension of hue, saturation and intensity to a segment having coordinate [0.0, 1.0] so that a common criterion can be determined and used.

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11. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al in view of Benati et al, further in view of Takaoka et al (US Patent, 6,798,903).

Regarding claims 14 and 15, Chen et al and Benati et al teach the method of claim 11. However they do not explicitly teach wherein the applying of the color correction includes manipulation of saturation and intensity of pixels within the defined region and wherein the applying of the color correction includes manipulating the hue, saturation, and intensity of pixels within the defined region to match a hue, saturation, and intensity of an identified true eye color. In the same field of endeavor, Takaoka et al teach applying of the color correction includes manipulating the hue, saturation, and intensity of pixels within the defined region to match a hue, saturation, and intensity of an identified true eye color (abstract, the identified true eye color is the target color, Figs. 2A-2c, Figs. 7 and 8, col. 22, lines 11-67). It is desirable to achieve satisfactory red-eye correction based on the photographing conditions (col. 2, lines 1-41 of Takaoka et al). Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the method of Takaoka et al in the method of Chen et al to apply color correction which includes manipulating the hue, saturation, and intensity of pixels within the defined region to match a hue, saturation, and intensity of an identified true eye color to achieve satisfactory red-eye correction.

12. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al in view of Takaoda et al.

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Regarding claims 19 and 20, Chen et al teach the method of claim 16. However they do not explicitly teach wherein the applying of the color correction includes manipulation of saturation and intensity of pixels within the defined region and wherein the applying of the color correction includes manipulating the hue, saturation, and intensity of pixels within the defined region to match a hue, saturation, and intensity of an identified true eye color. In the same field of endeavor, Takaoka et al teach applying of the color correction includes manipulating the hue, saturation, and intensity of pixels within the defined region to match a hue, saturation, and intensity of an identified true eye color (abstract, the identified true eye color is the target color, Figs. 2A-2c, Figs. 7 and 8, col. 22, lines 11-67). It is desirable to achieve satisfactory red-eye correction based on the photographing conditions (col. 2, lines 1-41 of Takaoka et al). Therefore it would have been obvious to one of ordinary skill in the art, at the time of invention, to use the method of Takaoka et al in the method of Chen et al to apply color correction which includes manipulating the hue, saturation, and intensity of pixels within the defined region to match a hue, saturation, and intensity of an identified true eye color to achieve satisfactory red-eye correction.

#### ***Allowable Subject Matter***

Claims 4, 6, 10, 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to teach the listed claims each of which specifically comprises the following listed feature(s) in combination with other limitations in the respective claims:

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Claim 4

-- wherein the defined hue segment is within a hue spectrum defined by the coordinates [0.0; 1.0], and the defined hue segment is within one of [0.0; 0.0694] and [0.9167; 1.0].

Claim 6

-- wherein the defined region of the HSI color space is within an area on a plot of saturation verses intensity, the area being defined as greater than or equal to a polyline on the plot of saturation verses intensity defined by coordinates including [0.0; 1.0], [0.5; 1.0], [0.55; 0.34], and [1.0; 0.3].

Claims 10 and 13

-- wherein the virtual weight center is determined using a pixel's corresponding coordinates in a plot of saturation verses intensity in the HSI color space, and the real color center is defined as at least one pixel of all pixels within the identified red eye region with an HSI value closest to an arithmetic average of HSI values for all pixels within the identified red eye region.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuzhen Ge whose telephone number is 571-272 7636. The examiner can normally be reached on 7:30am-4:00pm.

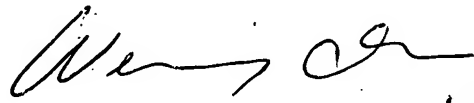
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Yuzhen Ge  
Examiner  
Art Unit 2624

WENPENG CHEN  
PRIMARY EXAMINER



1/21/07